

SUBARU

All Models

DESCRIPTION

The evaporative emission control system prevents fuel vapors in gas tank (and on California models, from the carburetor float bowl) from being discharged into the atmosphere. The system includes a sealed fuel tank, vapor separator, purge check valve, carbon canister, two-way valve, and a solenoid valve (used on most models).

OPERATION

When engine is stopped, accumulated fuel vapors flow into charcoal canister through evaporation hose. When engine is idling, high manifold vacuum closes purge valve, trapping vapors in canister. As engine speed increases, carburetor vacuum overcomes manifold vacuum to open purge valve, allowing vapors to enter intake manifold.

A solenoid timer valve is used on all models (except Federal Hatchback STD and DL, Sedan DL and Hardtop DL) to delay purging of carbon canister when engine is started. The time delay will be 130 seconds for manual transmissions and 245 seconds for automatic transmissions.

The check valve (located between canister and intake manifold) closes when engine is stopped to prevent vapors from entering intake manifold and accumulating there.

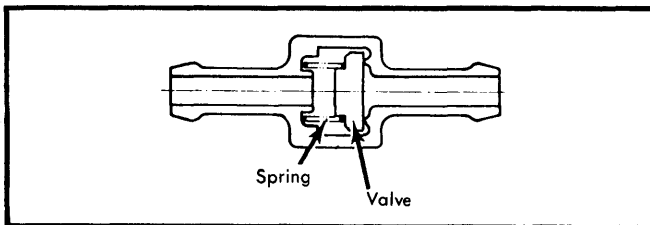


Fig. 1 Cross Section of Purge Line Check Valve

TESTING

System Test - 1) With gas cap removed, disconnect evaporative hose between carbon canister and fuel tank. Blow air toward carbon canister, no resistance should be felt. Blow air toward fuel tank, slight resistance should be felt because of the two-way valve.

2) Disconnect the vacuum hose from the pipe going to the carbon canister vacuum vent port. Blow air into the hose. If air can be blown into the canister, the diaphragm in the purge control valve is ruptured and the canister must be replaced.

Check Valve - Disconnect check valve and blow air from distributor side to carburetor side. Air should flow with no restriction. Blow air from carburetor side to distributor side. Air should not flow. If valve does not perform as specified, it must be replaced.

Solenoid Valve - 1) Disconnect electrical connections on valve. Connect an ohmmeter between the positive and negative terminals. Reading should be between 16.3-19.9 ohms. If not, replace valve.

2) If reading is to specifications, connect the ohmmeter leads to the negative or positive terminal and to solenoid case. Reading should be very high (1 million ohms or more). If readings are not to specifications, replace valve.

3) Apply vacuum to the distributor port of the solenoid valve. With no voltage to solenoid, vacuum should be felt at the carburetor port but not at the atmosphere or manifold port.

4) Apply voltage to solenoid. Vacuum should be felt at the atmosphere or manifold port but not at the carburetor port. If valve does not perform as specified, replace solenoid valve.

MAINTENANCE

Check evaporative emission system for damage or clogged lines, defective valves or carbon canister every 30 months or 30,000 miles. Repair or replace components as necessary.

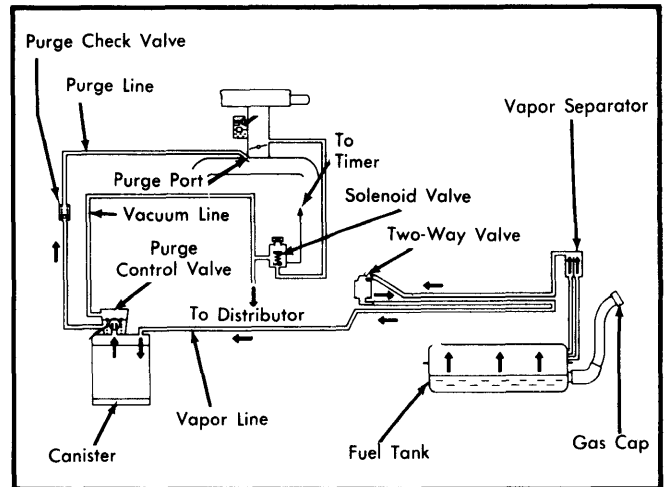


Fig. 2 Subaru Evaporative Emission Control for All Federal Models (Exc. Hatchback STD & DL, Sedan DL, and Hardtop DL Models)

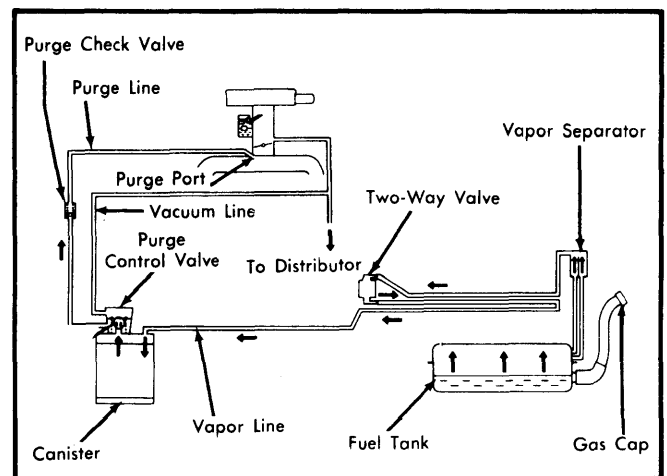


Fig. 3 Subaru Evaporative Emission Control for Federal Hatchback STD & DL, Sedan DL, and Hardtop DL Models

1980 Fuel Evaporation Systems

SUBARU (Cont.)

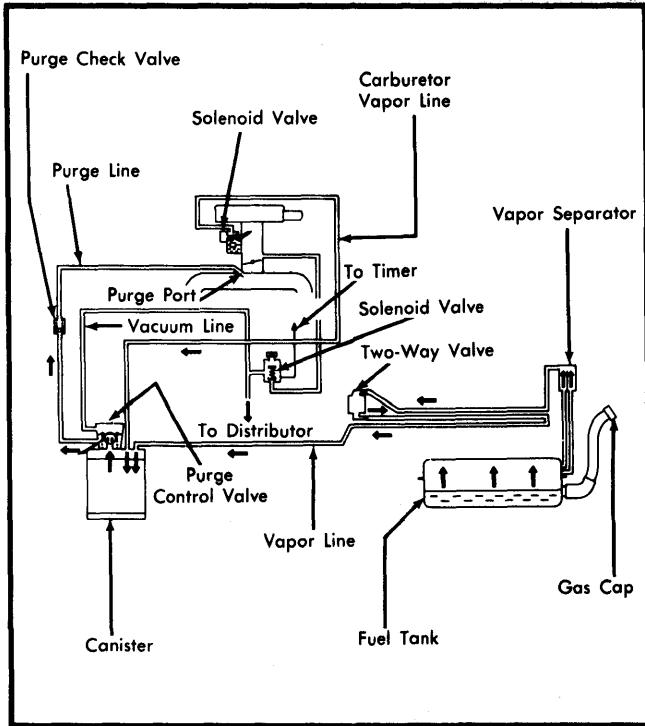


Fig. 4 Subaru Evaporative Emission Control for All California Models

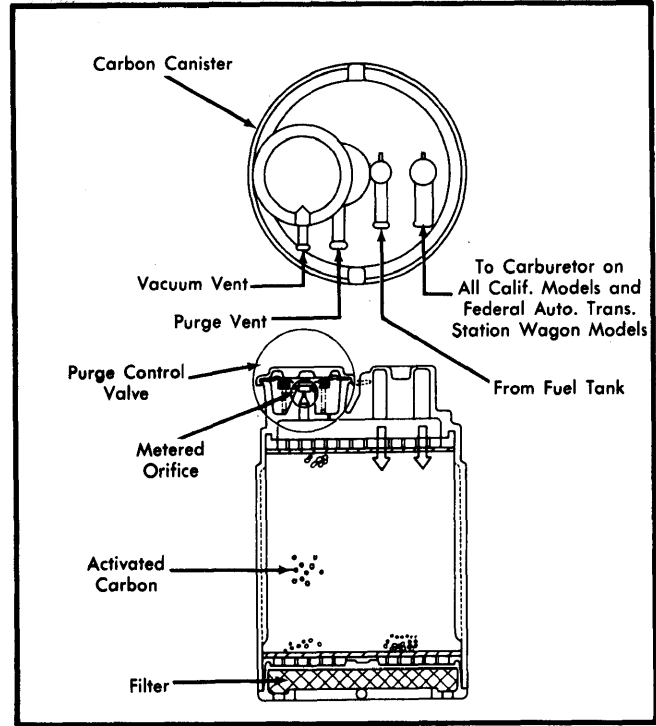


Fig. 5 Subaru Carbon Canister for All Models